

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings, and all prior versions, of claims in the application.

LISTING OF CLAIMS:

Claims 1 - 38 (cancelled)

39. (currently amended) A plasma processing method comprising ~~the steps of:~~
a step of locating a specimen on a specimen table provided inside of a processing
chamber, a step of supplying a processing gas during evacuating inside of the
processing chamber from the lower portion thereof, a step of generating plasma
inside the processing chamber to process a plurality of films stacked on the
specimen, wherein the specimen table comprises comprising a dielectric film
comprising an upper surface of the specimen table on which the specimen is located
and a central channel disposed in a central portion of a heat conductive block of the
specimen table, an outer circumferential channel in an outer circumferential portion
of the heat conductive metal block and a ring-like part with a lower heat conductivity
than that of the heat conductive block suppressing a heat conduction between the
central portion and the outer circumferential portion thereof disposed between the
central channel and the outer circumferential channel inside the heat conductive
block;, the plasma processing method further comprising:
supplying a processing gas during evacuation of the inside of the processing
chamber from a lower portion thereof;
generating plasma inside of the processing chamber to process a plurality of
films stacked on the specimen;

a step of circulating coolant inside each of the central channel and the circumferential channel, the temperature of the coolant in the central channel being is adjusted to be higher than at a predetermined temperature difference than that of the coolant in the circumferential channel;

a step of absorbing electrostatically the specimen on the dielectric film and holding the specimen thereon;

a step of supplying the heat conductive gases to spaces between a the specimen rear surface of the specimen and a the dielectric film comprising an upper surface of the specimen table, the spaces being constituted by to independent spaces of a central space and an outer circumferential space by a ring-like protrusion which is disposed on the dielectric film at a position above the ring-like part inside of the heat conductive block and contacts closely with the rear surface of the specimen by the electrostatic absorption, and adjusting a pressure of the heat conductive gas in the outer circumferential central space to be higher than that of the heat conductive gas in the outer circumferential central space at a predetermined value of a pressure difference; and

after processing an upper film of the plurality of films on the specimen while maintaining the temperatures of the coolant and the pressures of the heat conductive gases, changing the value of the pressures of the heat conductive gases in the central space and the outer circumferential space, while the temperatures of the coolant is maintained, and processing a lower film of the plurality of films on the specimen.

40. (previously presented) A plasma processing method according to claim 39, wherein the pressures of heat conductive gases in the central space and the outer

circumferential space are adjusted on the basis of information obtained before processing of the specimen.

41. (previously presented) A plasma processing method according to claim 40, wherein based on the information obtained, determining when the lower film should be processed with a temperature difference of the specimen which is larger than can be formed by a maximum pressure difference between the central space and the outer circumferential space , and changing the temperatures of the central portion and the circumferential portion of the heat conductive block, while changing the pressures of the heat conductive gases in the central space and the outer circumferential space .

42. (currently amended) A plasma processing method according to claim 39, wherein after processing the upper film of the plurality of films on the specimen while maintaining the temperatures of the heat conductive block and the pressures of the heat conductive gases, changing the value of the pressure difference between the central space and the outer circumferential space so that a value of the pressure difference between the pressure of the heat conductive gas in the outer circumferential space is higher than that in and the central space is made greater while maintaining the temperatures of the portions of the heat conductive block, ~~and~~ is maintained and processing the lower film of the plurality of films on the specimen,

the pressures of the heat conductive gases in the central space and the outer circumferential space ~~being~~ is adjusted on the basis of information obtained before processing of the specimen.

43. (previously presented) A plasma processing method according to claim 42, wherein the pressures of heat conductive gases in the central space and the outer circumferential space are adjusted on the basis of information obtained before processing of the specimen.

44. (previously presented) A plasma processing method according to claim 43, wherein based on the information obtained, determining when the lower film should be processed with a temperature difference of the specimen which is larger than can be formed by a maximum pressure difference between the central space and the outer circumferential space, changing the temperatures of the central portion and the circumferential portion of the heat conductive block, while changing the pressures of the heat conductive gases in the central space and the outer circumferential space.

45. (currently amended) A plasma processing method comprising ~~the steps of:~~
a step of locating a specimen on a specimen table provided inside of a processing chamber, wherein the specimen table comprises a central channel disposed in a central portion of a heat conductive block of the specimen table, an outer circumferential channel in an outer circumferential portion of the heat conductive block and a ring-like part suppressing a heat conduction between the central portion and the outer circumferential portion thereof disposed between the central channel and the outer circumferential channel inside the heat conductive block;
a step of supplying a processing gas during evacuation of the inside of the processing chamber from a lower portion thereof; generating,
step of generating plasma inside

of the processing chamber to process a plurality of films stacked on the

specimen;specimen, wherein the specimen table comprising a dielectric film
comprising an upper surface of the specimen table on which the specimen is located
and a central channel disposed in a central portion of a heat conductive block of the
specimen table and an outer circumferential channel in an outer circumferential
portion of the heat conductive block and a ring-like part with a lower thermal
conductivity than that of the metal block suppressing a heat conduction between the
central portion and the outer circumferential portion thereof disposed between the
heat conductive block, the plasma processing method further comprising:

a step of circulating coolant inside each of the central channel and the outer
circumferential channel, the temperature of the coolant in the central channel being
adjusted higher than a predetermined temperature difference than that of the coolant
in the circumferential channel;

a step of absorbing electrostatically the specimen on the dielectric film and
holding the specimen thereon;

a step of supplying the heat conductive gases to spaces between a the
specimen rear surface of the specimen and a the dielectric film comprising an upper
surface of the specimen table, film, the spaces constituting is constituted to
independent spaces of a central space and an outer circumferential space by a ring-
like protrusion which is disposed on the dielectric film at a position above the ring-like
part inside of the heat conductive block and contacts closely with the rear surface of
the specimen by the electrostatic absorption, and adjusting a pressure of the heat
conductive gas in the central space to be higher than that of the heat conductive gas
in the outer circumferential space at a predetermined value of a pressure difference
therebetween; and

after processing an upper film of the plurality of films on the specimen while maintaining the temperatures of the heat conductive block and the pressures of the heat conductive gases, changing the ~~pressures~~pressure difference of the heat conductive gases in ~~in-between~~ the central space and the outer circumferential space smaller, while the temperatures of the portions of the heat conductive block is maintained and processing a lower film of the plurality of films on the specimen.

46. (previously presented) A plasma processing method according to claim 45, wherein the pressures of heat conductive gases in the central space and the outer circumferential space are adjusted on the basis of information obtained before processing of the specimen.

47. (previously presented) A plasma processing method according to claim 46, wherein based on the information obtained, determining when the lower film should be processed with a temperature difference of the specimen which is larger than can be formed by a maximum pressure difference between the central space and the outer circumferential space, and changing the temperatures of the central portion and the circumferential portion of the heat conductive block, while changing the pressures of the heat conductive gases in the central space and the outer circumferential space .

48 - 50. (cancelled)